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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/643,827	08/18/2003	Martin E. Lozano	024.0018	5166
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INGRASSIA FISHER & LORENZ, P.C. 7150 E. CAMELBACK, STE. 325 SCOTTSDALE, AZ 85251			AGRAWAL, CHRISTOPHER K	
			ART UNIT	PAPER NUMBER
			3726	

DATE MAILED: 08/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/643,827	Applicant(s) LOZANO ET AL.	
	Examiner Christopher K. Agrawal	Art Unit 3726	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 31 May 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 and 22-33 is/are pending in the application.
- 4a) Of the above claim(s) 1-15 and 32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 16-20, 23-31 and 33 is/are rejected.
- 7) ☒ Claim(s) 22 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. **Claims 16-18, 20, 23-26 and 31 are rejected under 35 U.S.C. 102(b) as being anticipated by Krumweide (U.S. Patent No. 4,239,564).**

3. **Claim 16:** Krumweide teaches a method for adapting a propellant container to prevent de-bonding of insulation therefrom, the method comprising: forming at least a part of said propellant container (**Col. 1 lines 16-22**) from a substrate having an outer surface **12**; and covering said substrate with a base material **14** having an inner surface, a rough outer surface relative to said outer surface of said substrate (**Col. 3 lines 44-58**) and extensions that extend from said base material in a direction away from said rough outer surface without extending in a direction approaching said outer surface of said substrate (**see Fig. 1**) and adhering said inner surface to said outer surface of said substrate (**Col. 3 lines 40-41; Col. 7 lines 39-40**).

4. **Claim 17:** Krumweide also teaches the method further comprising forming an insulation material over said base material (**Col. 1 lines 20-24; Col. 2 lines 9-11**) and encapsulating said extensions with said insulation material.

5. **Claim 18:** Krumweide also teaches the method wherein said insulation is spray-on foam insulation (**Col. 4 lines 48-52**).

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6. Claim 20: Krumweide also teaches the method wherein a base material is a mesh sheet **14, 16** having openings therein (**Col. 4 lines 4-40**).
7. Claim 23: Krumweide also teaches the method wherein said extensions have fingers **18** for gripping said insulation material.
8. Claim 24: Krumweide also teaches the method wherein said fingers extend away from said extensions in a direction approaching said outer surface of said substrate (**see angled face of 18 pointing in direction of substrate outer surface**).
9. Claim 25: Krumweide teaches the method wherein said fingers together form hooked formations **18**.
10. Claim 26: Krumweide teaches the method wherein said fingers together form barbed formations **18**.
11. Claim 31: Krumweide teaches the method wherein said base material is tack-welded to said substrate (**via extensions 10; see Col. 7 lines 39-41**).

***Claim Rejections - 35 USC § 103***

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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13. **Claims 16-18, 20, 23-26, 29-31 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krumweide (U.S. Patent No. 4,239,564) in view of Bennett (U.S. Patent No. 3,753,848).**

14. Claim 16: Krumweide teaches a method for adapting a propellant container to prevent de-bonding of insulation therefrom (**Col. 1 lines 16-22**), which comprises: forming at least a part of said container from a substrate having an outer surface **12** and covering said substrate with means **10, 14, 16, 18** to retain foam insulation (**Col. 1 lines 20-24; Col. 2 lines 9-11**) but does not specifically teach the method including covering the substrate with a base material having a rough outer surface relative to said outer surface of said substrate and extensions that extend from said base material in a direction away from said rough outer surface without extending in a direction approaching said outer surface of said substrate and adhering said inner surface to said outer surface of said substrate.

15. Bennett teaches a method for retaining insulation including covering a container substrate with a base material **27** having a rough outer surface (**including attached irregularities 33; Col. 2 lines 63-65**) relative to said outer surface of said substrate for the purpose of securing insulation to the surface of the container and extensions **33,45** that extend from said base material in a direction away from said rough outer surface without extending in a direction approaching said outer surface of said substrate (**see Fig. 2**) and adhering said inner surface to said outer surface of said substrate (**Col. 3 lines 64-66**).

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16. It would have been obvious to one of ordinary skill in the art at the time of the invention to have incorporated use of a base material having a rough outer surface, as taught by Bennett, for the purpose of retaining the means 10 of Krumweide for securing the insulation to the container surface.

17. Claim 17: Krumweide/Bennett teach the method of claim 16 as described above. Krumweide also teaches the method including forming an insulation material over a base material of the container surface (**Col. 1 lines 20-24; Col. 2 lines 9-11**).

18. Claim 18: Krumweide/Bennett teach the method of claim 17 as described above. Krumweide also teaches the method wherein said insulation is spray-on foam insulation (**Col. 4 lines 48-52**).

19. Claim 20: Krumweide/Bennett teach the method of claim 16 as described above but do not specifically teach the method wherein a base material is a mesh sheet having openings therein.

20. Krumweide teaches the method wherein a layer of the retaining means is a mesh sheet **14, 16** having openings therein (**Col. 4 lines 4-40**).

21. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have incorporated a mesh sheet having openings therein, as taught in the securing means of Krumweide, as the base layer of Bennett especially given the known use of such a mesh layer for securing insulation.

22. Claim 23: Krumweide/Bennett teach the method as described above. Bennett further teaches the method wherein said extensions have fingers **49** for gripping an insulation material to be formed over said base material outer surface.

23. Claim 24: Krumweide/Bennett teach the method of claim 23 as described above. Bennett further teaches the method wherein said fingers **49** extend away from said extensions in a direction approaching said substrate outer surface (see Fig. 2 where top surfaces of fingers 49 point in direction approaching substrate outer surface 22).

24. Claim 25: Krumweide/Bennett teach the method of claim 24 as described above. Bennett further teaches the method wherein said fingers together form hooked formations **49**.

25. Claim 26: Krumweide/Bennett teach the method of claim 24 as described above. Bennett further teaches the method wherein said fingers together form barbed formations **49**.

26. Claim 29: Bennett teaches the method wherein said inner surface has an adhesive material adhered thereto before said base material is adhered to said substrate (Col. 3 lines 64-70).

27. Claim 30: Bennett teaches the method wherein said base material is adhered to said substrate using an adhesive material (Col. 3 lines 64-70).

28. Claim 31: Krumweide/Bennett teach the method of claim 16 as describe above but do not specifically teach the method wherein said base material is tack-welded to said substrate.

29. Krumweide teaches the method wherein tack welding is used to adhere the securing means to the substrate (Col. 7 lines 39-41). Therefore, it would have been

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obvious to one of ordinary skill in the art at the time of the invention to have used tack-welding for the purpose of adhering the base material to the substrate.

30. Claim 33: Krumweide teaches a method for preventing de-bonding of insulation from a container (**Col. 1 lines 16-34**), the method comprising: forming at least a part of said propellant container from a substrate having an outer surface **12**; covering said substrate with means **10, 14, 16, 18** to retain foam insulation and forming an insulation material (**Col. 1 lines 20-24; Col. 2 lines 9-11**) over said outer surface of the retaining means but does not specifically teach the method including covering the substrate with a base material having a rough outer surface relative to said outer surface of said substrate and extensions that extend from said base material in a direction away from said rough outer surface without extending in a direction approaching said outer surface of said substrate; and adhering said inner surface to said outer surface of said substrate and encapsulating said extensions with said insulation material.

31. Bennett teaches a method for retaining insulation including covering a container substrate with a base material **27** having a rough outer surface (**including attached irregularities 33; Col. 2 lines 63-65**) relative to said outer surface of said substrate and extensions **33,45** that extend from said base material in a direction away from said rough outer surface without extending in a direction approaching said outer surface of said substrate (**Fig. 2**) adhering said inner surface to said outer surface of said substrate (**Col. 3 lines 64-66**) and encapsulating said extensions with said insulation material (**see 33 in Fig. 2**) for the purpose of securing insulation to the surface of the container.



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32. It would have been obvious to one of ordinary skill in the art at the time of the invention to have incorporated use of a base material having a rough outer surface for the purpose of retaining insulation given the teaching in Krumweide of the use of rough layers (**e.g. 14, 16**) for ideally securing insulation to the container surface.

**33. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Krumweide in view of Bennett and Sperber (U.S. Patent No. 6,584,749).**

34. Claim 19: Krumweide/Bennett teach the method of claim 16 as described above but do not specifically teach the method wherein the outer surface of the base material is corrugated.

35. Sperber teaches a method of spraying on insulation wherein the outer surface of the base material is corrugated (**Col. 4 lines 9-11; Figs. 1-2**).

36. It would have been obvious to one of ordinary skill in the art at the time of the invention to have incorporated a corrugated base material for the purpose of securing foam insulation to the container especially given the teaching in Krumweide of the special bonding properties of non-smooth surfaces (**Col. 4 lines 25-45**).

**37. Claims 27-28 rejected under 35 U.S.C. 103(a) as being unpatentable over Krumweide (U.S. Patent No. 4,239,564).**

38. Claims 27-28: Krumweide/Bennett teach the method as described above.

Krumweide further teaches the method wherein said extensions are spaced apart but does not specifically teach the method wherein said extensions are spaced between  $\frac{1}{2}$

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and 1 inch or wherein said extensions are disposed more densely in regions likely to de-bond from the substrate.

39. It would have been obvious, however, to one of ordinary skill in the art to have spaced the extensions as needed to prevent de-bonding. It is merely a matter of conventional experimentation and design choice to position the extensions having spacing density to obtain the desired insulation retaining properties. This includes and renders obvious spacing of between  $\frac{1}{2}$  and 1 inch.

#### ***Allowable Subject Matter***

40. Claim 22 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Response to Arguments***

41. Applicant's arguments filed May 31, 2006 have been fully considered but they are not persuasive.

42. As a preliminary matter, Examiner notes that the rejections under 35 U.S.C. 102 and 35 U.S.C. 103 were made in the alternative as corresponding to two acceptable interpretations of the Krumweide reference. Therefore, Applicant's argument that 102 rejection is improper in view of an alleged admission of paragraph 22 is moot.

43. With respect to Applicant's argument (Remarks page 11) that Krumweide fails to teach the method wherein the base material outer surface is rougher than the substrate

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outer surface, Examiner notes that comparison of the surfaces illustrated in Figure 1 suggests such a characteristic. Furthermore, because the substrate (12) constitutes a fuel tank, presumably made of metal or a similarly strong, smooth surface whereas the base material (14) is made of "perforated aluminum sheet, having...holes punched" therein, it can reasonably be interpreted that the base material outer surface is rougher than the substrate outer surface.

44. With respect to Applicant's similar arguments related to Bennett, Examiner maintains that characterization of the "irregularities" at the end of the support member (base material) constitutes sufficient roughness to meet the limitation of a base material outer surface being rougher than the substrate outer surface.

45. Applicant's note that a *second* support member of Bennett is not the outer surface of the base material is irrelevant.

46. With respect to Applicant's argument that neither Krumweide nor Bennett (nor the combination thereof) teaches adhering the base material to the substrate, Examiner maintains that the respective citations (Krumweide Col. 7 line 40) and (Bennett Col. 3 lines 64-66) specifically teach this limitation.

47. With respect to Applicant's argument that motivation is precluded by the fact that incorporation of Bennett's irregularities in the studs of Krumweide would not prevent debonding, Examiner maintains that the studs and irregularities of both Krumwiede and Bennett are for the explicit purpose of retaining (preventing the non-bonding of) foam insulation. Therefore, it is substantially clear that one of ordinary skill in the art would have been motivated to combine the teachings of these references in either direction

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especially because they reside in the same field of endeavor and seek to solve the same particular problem of bonding foam insulation to a substrate.

48. With respect to Applicant's argument that Bennett does not teach a method wherein the fingers form hooked or barbed formations, Examiner interprets the irregularities 35,49 to constitute fingers that hook the insulation especially since they are referred to as "retainers". This is supported by the reference at Col. 3 lines 20-25.

49. With respect to Applicant's argument that the references fail to show the limitation of claim 33 wherein the extensions are encapsulated with insulation material, Examiner notes that extensions 33 in Figure 2 of Bennett are encapsulated with insulation material.

### ***Conclusion***

50. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

51. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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52. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher K. Agrawal whose telephone number is (571) 272-3578. The examiner can normally be reached on Mon-Fri 8:30AM-5:00PM.

53. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bryant can be reached on (571) 272-4526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

54. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CKA



DAVID P. BRYANT  
SUPERVISORY PATENT EXAMINER

7/24/06